What is claimed is:

1. A method for determining whether a data point of an imaging study indicates a presence of a sub-visible cloud using data including visible, near-infrared, and short wavelength infrared data, the method comprising:

5   selecting a data point from an imaging study of an area potentially covered by at least one of visible clouds and sub-visible clouds; and

determining whether the data point is covered by visible cloud; and

determining whether the data point indicates presence of a sub-visible cloud including:

10   comparing a cirrus-band reflectance of the data point with a sub-visible cirrus-band reflectance threshold; and

classifying the data point as a sub-visible cloud point if the cirrus-band reflectance of the data point exceeds the sub-visible cirrus band reflectance threshold.

15   2. The method of Claim 1, wherein the cirrus-band is approximately a 1.88 μm wavelength cirrus band.

3. The method of Claim 1, wherein the cirrus-band is approximately a 1.38 μm wavelength cirrus band.

4. The method of Claim 1, wherein the sub-visible cirrus band reflectance threshold is 20 approximately 0.01.

5. The method of Claim 1, wherein the method is iterated for each of a plurality of data points in a set of imaging data.

6. The method of Claim 1, further comprising determining whether the data point indicates the presence of a visible cloud.

7.   The method of Claim 6, wherein the determining of whether the data point indicates the presence of a visible cloud is made before the determining of whether the data point indicates the presence of a sub-visible cloud.

8.   The method of Claim 6, wherein the determining of whether the data point indicates the presence of a visible cloud using data including visible, near-infrared, and short wavelength infrared data including:

> classifying the data point as a visible cloud point if the cirrus-band reflectance of the data point exceeds the visible cirrus-band reflectance threshold; and
>
> when the cirrus-band reflectance of the data point does not exceed the visible cirrus-band reflectance threshold, performing a further analysis of the data point including:
>
>> performing at least one additional comparison of an additional cloud indicator with an additional cloud indicator threshold, the additional cloud indicator being derived from at least one of the visible, near-infrared, and short wavelength infrared data; and
>>
>> classifying the data point as one of a visible cloud point or as not being a visible cloud point.

9.   The method of Claim 8, wherein the additional cloud indicator threshold is empirically derived from examining additional cloud indicator values for representative sets of empirical data points identified as cloud points or non-cloud points.

10.   The method of Claim 6, wherein the determining of whether the data point indicates the presence of a visible cloud is made using thermal imaging.

11.   A method for determining whether a data point of an imaging study indicates a presence of a cloud using data including visible, near-infrared, and short wavelength infrared data, the method comprising:

> selecting a data point from an imaging study of an area potentially covered by at least one of visible clouds and sub-visible clouds;

determining whether the data point indicates presence of a visible cloud; and

when it is determined that the data point does not indicate the presence of a visible cloud, determining whether the data point indicates presence of a sub-visible cloud including:

comparing a cirrus-band reflectance of the data point with a sub-visible cirrus-band reflectance threshold; and

classifying the data point as a sub-visible cloud point if the cirrus-band reflectance of the data point exceeds the sub-visible cirrus band reflectance threshold.

12. The method of Claim 11, wherein the cirrus-band is approximately a 1.88 μm wavelength cirrus band.

13. The method of Claim 11, wherein the cirrus-band is approximately a 1.38 μm wavelength cirrus band.

14. The method of Claim 11, wherein the sub-visible cirrus band reflectance threshold is approximately 0.01.

15. The method of Claim 11, wherein the method is iterated for each of a number of data points in a set of imaging data.

16. The method of Claim 11, wherein the determining of whether the data point indicates the presence of a visible cloud using data including visible, near-infrared, and short wavelength infrared data including:

classifying the data point as a visible cloud point if the cirrus-band reflectance of the data point exceeds the visible cirrus-band reflectance threshold; and

when the cirrus-band reflectance of the data point does not exceed the visible cirrus-band reflectance threshold, performing a further analysis of the data point including:

performing at least one additional comparison of an additional cloud indicator with an additional cloud indicator threshold, the additional

cloud indicator being derived from at least one of the visible, near-infrared, and short wavelength infrared data; and

classifying the data point as one of a visible cloud point or as not a visible cloud point.

17. The method of Claim 16, wherein the additional cloud indicator threshold is empirically derived from examining additional cloud indicator values for representative sets of empirical data points identified as cloud points or non-cloud points.

18. A computer-readable medium having stored thereon instructions for determining whether a data point of an imaging study indicates a presence of a sub-visible cloud using data including visible, near-infrared, and short wavelength infrared data, the computer-readable medium comprising:

a first computer program portion adapted to select a data point from an imaging study of an area potentially covered by at least one of visible clouds and sub-visible clouds; and

a second computer program portion adapted to determine whether the data point indicates presence of a sub-visible cloud including:

a third computer program portion adapted to compare a cirrus-band reflectance of the data point with a sub-visible cirrus-band reflectance threshold; and

a fourth computer program portion adapted to classify the data point as a sub-visible cloud point if the cirrus-band reflectance of the data point exceeds the sub-visible cirrus band reflectance threshold.

19. The computer-readable medium of Claim 18, wherein the cirrus-band is approximately a 1.88 μm wavelength cirrus band.

20. The computer-readable medium of Claim 18, wherein the cirrus-band is approximately a 1.38 μm wavelength cirrus band.

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21. The computer-readable medium of Claim 18, wherein the sub-visible cirrus band reflectance threshold is approximately 0.01.

22. The computer-readable medium of Claim 18, further comprising a fifth computer program portion adapted to iterate the instructions for each of a plurality of data points in a set of imaging data.

23. The computer-readable medium of Claim 18, further comprising a sixth computer program portion adapted to determine whether the data point indicates the presence of a visible cloud.

24. The computer-readable medium of Claim 23, wherein the determining of whether the data point indicates the presence of a visible cloud is made before the determining of whether the data point indicates the presence of a sub-visible cloud.

25. The computer-readable medium of Claim 23, wherein the determining of whether the data point indicates the presence of a visible cloud using data including visible, near-infrared, and short wavelength infrared data including:

a seventh computer program portion adapted to classify the data point as a visible cloud point if the cirrus-band reflectance of the data point exceeds the visible cirrus-band reflectance threshold; and

when the cirrus-band reflectance of the data point does not exceed the visible cirrus-band reflectance threshold, an eighth computer program portion adapted to perform a further analysis of the data point including:

a ninth computer program portion adapted to perform at least one additional comparison of an additional cloud indicator with an additional cloud indicator threshold, the additional cloud indicator being derived from at least one of the visible, near-infrared, and short wavelength infrared data; and

a tenth computer program portion adapted to classify the data point as one of a visible cloud point or as not a visible cloud point.

26.	The computer-readable medium of Claim 25, wherein the additional cloud indicator threshold is empirically derived from examining additional cloud indicator values for representative sets of empirical data points identified as visible cloud points or non-visible cloud points.

27.	The computer-readable medium of Claim 23, wherein the determining of whether the data point indicates the presence of a visible cloud is made using thermal imaging.

28.	A computer-readable medium having stored thereon instructions for determining whether a data point of an imaging study indicates a presence of a cloud using data including visible, near-infrared, and short wavelength infrared data, the computer-readable medium comprising:

> a first computer program portion adapted to select a data point from an imaging study of an area potentially covered by at least one of visible clouds and sub-visible clouds;
>
> a second computer program portion adapted to determine whether the data point indicates presence of a visible cloud; and
>
> a third computer program portion adapted to determine, when it is determined that the data point does not indicate the presence of a visible cloud, whether the data point indicates presence of a sub-visible cloud including:
>
>> a fourth computer program portion adapted to compare a cirrus-band reflectance of the data point with a sub-visible cirrus-band reflectance threshold; and
>>
>> a fifth computer program portion adapted to classify the data point as a sub-visible cloud point if the cirrus-band reflectance of the data point exceeds the sub-visible cirrus band reflectance threshold.

29.	The computer-readable medium of Claim 28, wherein the cirrus-band is approximately a 1.88 μm wavelength cirrus band.

30. The computer-readable medium of Claim 28, wherein the cirrus-band is approximately a 1.38 μm wavelength cirrus band.

31. The computer-readable medium of Claim 28, wherein the sub-visible cirrus band reflectance threshold is approximately 0.01.

32. The computer-readable medium of Claim 28, further comprising a sixth computer program portion adapted to iterate the instructions for each of a plurality of data points in a set of imaging data.

33. The computer-readable medium of Claim 28, wherein the determining of whether the data point indicates the presence of a visible cloud using data including visible, near-infrared, and short wavelength infrared data including:

a seventh computer program portion adapted to classify the data point as a visible cloud point if the cirrus-band reflectance of the data point exceeds the visible cirrus-band reflectance threshold; and

when the cirrus-band reflectance of the data point does not exceed the visible cirrus-band reflectance threshold, an eighth computer program portion adapted to perform a further analysis of the data point including:

a ninth computer program portion adapted to perform at least one additional comparison of an additional cloud indicator with an additional cloud indicator threshold, the additional cloud indicator being derived from at least one of the visible, near-infrared, and short wavelength infrared data; and

a tenth computer program portion adapted to classify the data point as one of a visible cloud point or as not a visible cloud point.

34. The computer-readable medium of Claim 33, wherein the additional cloud indicator threshold is empirically derived from examining additional cloud indicator values for representative sets of empirical data points identified as cloud points or non-cloud points.

35.   A system for determining whether a data point of an imaging study indicates a presence of a sub-visible cloud using data including visible, near-infrared, and short wavelength infrared data, the system comprising:

a data point selector to configured to select a data point from an imaging study of

5   an area potentially covered by at least one of visible clouds and sub-visible clouds; and

a sub-visible cloud detector configured to determine whether the data point indicates presence of a sub-visible cloud including:

a cirrus-band comparator configured to compare a cirrus-band reflectance

10   of the data point with a sub-visible cirrus-band reflectance threshold; and

a data point classifier configured to classify the data point as a sub-visible cloud point if the cirrus-band reflectance of the data point exceeds the sub-visible cirrus band reflectance threshold.

15   36.   The system of Claim 35, wherein the cirrus-band is approximately a 1.88 μm wavelength cirrus band.

37.   The system of Claim 35, wherein the cirrus-band is approximately a 1.38 μm wavelength cirrus band.

38.   The system of Claim 35, wherein the sub-visible cirrus band reflectance threshold is

20   approximately 0.01.

39.   The system of Claim 35, wherein the data point selector is further configured to select each of a plurality of data points in a set of imaging data.

40.   The system of Claim 35, further comprising a visible cloud detector configured to determine whether the data point indicates the presence of a visible cloud.

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41. The system of Claim 35, wherein the visible cloud detector is further configured to determine whether the data point indicates the presence of a visible cloud before the sub-visible cloud detector determines the presence of a sub-visible cloud.

42. The system of Claim 41, wherein the visible cloud detector determines the presence of a visible cloud using data including visible, near-infrared, and short wavelength infrared data including:

a visible cirrus-band classifier configured to classify the data point as a visible cloud point if the cirrus-band reflectance of the data point exceeds the visible cirrus-band reflectance threshold; and

when the visible cirrus-band reflectance of the data point does not classify the data point as a visible cloud point, an additional classifier configured to perform at least one additional comparison of an additional cloud indicator with an additional cloud indicator threshold, the additional cloud indicator being derived from at least one of the visible, near-infrared, and short wavelength infrared data and classify the data point as one of a visible cloud point or as not a visible cloud point based on the at least one additional comparison.

43. The system of Claim 42, wherein the additional cloud indicator threshold is empirically derived from examining additional cloud indicator values for representative sets of empirical data points identified as cloud points or non-cloud points.

44. The system of Claim 40, wherein the visible cloud detector is configured to detect presence of visible clouds using thermal imaging.

45. A system for determining whether a data point of an imaging study indicates a presence of a cloud using data including visible, near-infrared, and short wavelength infrared data, the method comprising:

a data point selector configured to select a data point from an imaging study of an area potentially covered by at least one of visible clouds and sub-visible clouds;

a visible cloud detector to determine whether the data point indicates the presence of a visible cloud; and

a sub-visible cloud detector configured to determine, when the visible cloud detector has determined the data point does not indicate the presence of a visible cloud, whether the data point indicates presence of a sub-visible cloud including:

a cirrus-band comparator configured to compare a cirrus-band reflectance of the data point with a sub-visible cirrus-band reflectance threshold; and

a data point classifier configured to classify the data point as a sub-visible cloud point if the cirrus-band reflectance of the data point exceeds the sub-visible cirrus band reflectance threshold.

46. The system of Claim 45, wherein the cirrus-band is approximately a 1.88 μm wavelength cirrus band.

47. The system of Claim 45, wherein the cirrus-band is approximately a 1.38 μm wavelength cirrus band.

48. The system of Claim 45, wherein the sub-visible cirrus band reflectance threshold is approximately 0.01.

49. The system of Claim 45, wherein the data point selector is further configured to select each of a plurality of data points in a set of imaging data.

50. The system of Claim 45, wherein the visible cloud detector is further configured to determine whether the data point indicates the presence of a visible cloud after the sub-visible cloud detector determines the presence of a sub-visible cloud.

51.   The system of Claim 45, wherein the visible cloud detector determines the presence of a visible cloud using data including visible, near-infrared, and short wavelength infrared data including:

> a visible cirrus-band classifier configured to classify the data point as a visible cloud point if the cirrus-band reflectance of the data point exceeds the visible cirrus-band reflectance threshold; and
>
> when the visible cirrus-band reflectance of the data point does not classify the data point as a visible cloud point, an additional classifier configured to perform at least one additional comparison of an additional cloud indicator with an additional cloud indicator threshold, the additional cloud indicator being derived from at least one of the visible, near-infrared, and short wavelength infrared data and classify the data point as one of a visible cloud point or as not a visible cloud point based on the at least one additional comparison.

52.   The system of Claim 51, wherein the additional cloud indicator threshold is empirically derived from examining additional cloud indicator values for representative sets of empirical data points identified as cloud points or non-cloud points.

53.   The system of Claim 45, wherein the visible cloud detector is configured to detect presence of visible clouds using thermal imaging.